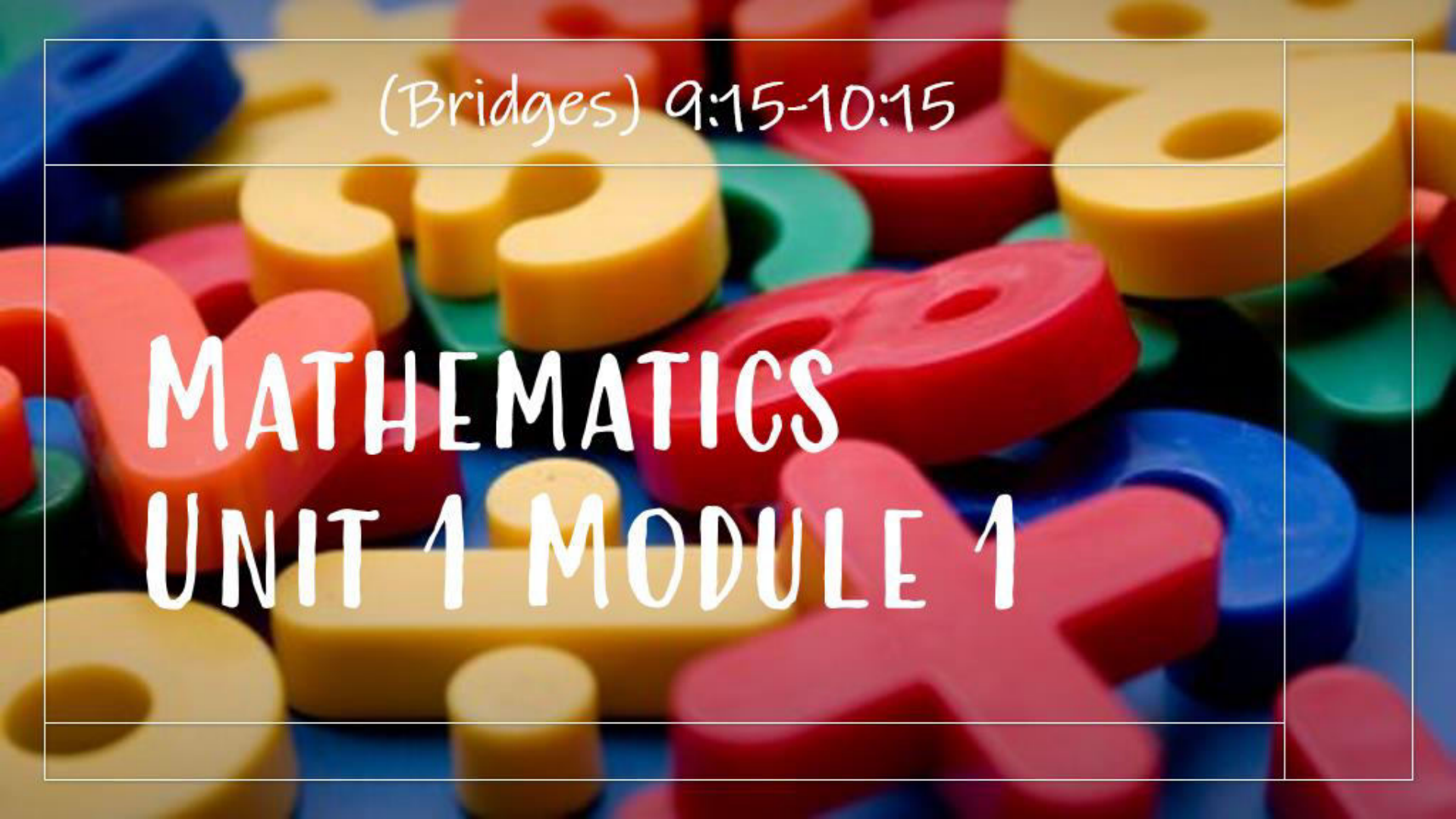
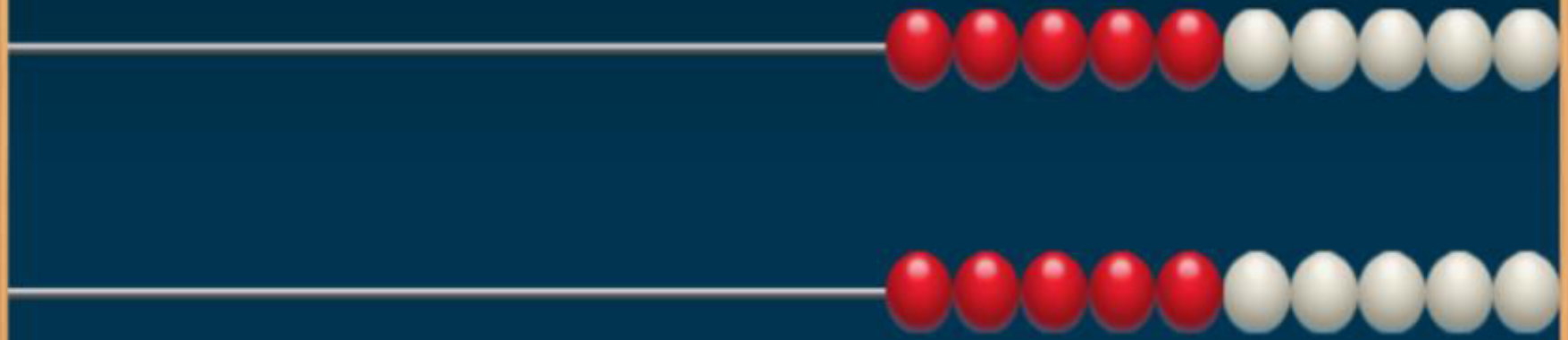

(Bridges) 9:15-10:15
Mathematics
Unit 1 Module 1



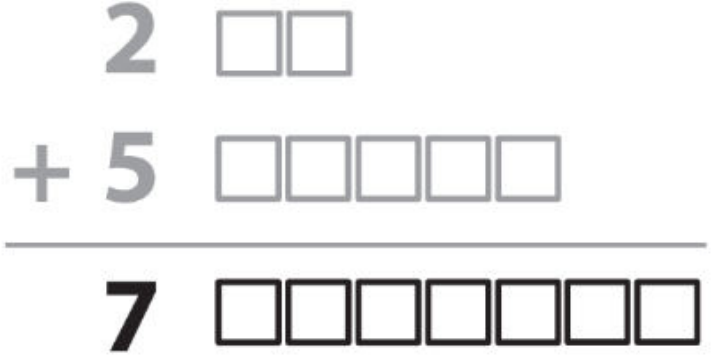
Session 3 Unit 1
Pre-Assessment & Number Rack Review

Working Definition

sum or total: the result of adding two or more numbers

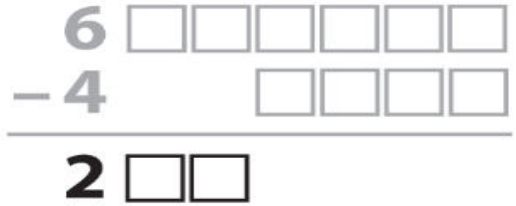
$$2 + 5 = 7$$

sum or total

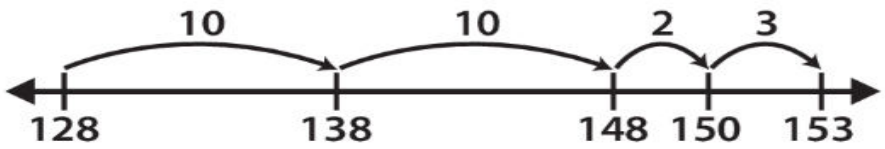


Working Definition

difference: the result of subtracting one number from another; the amount by which one number is greater or less than another number



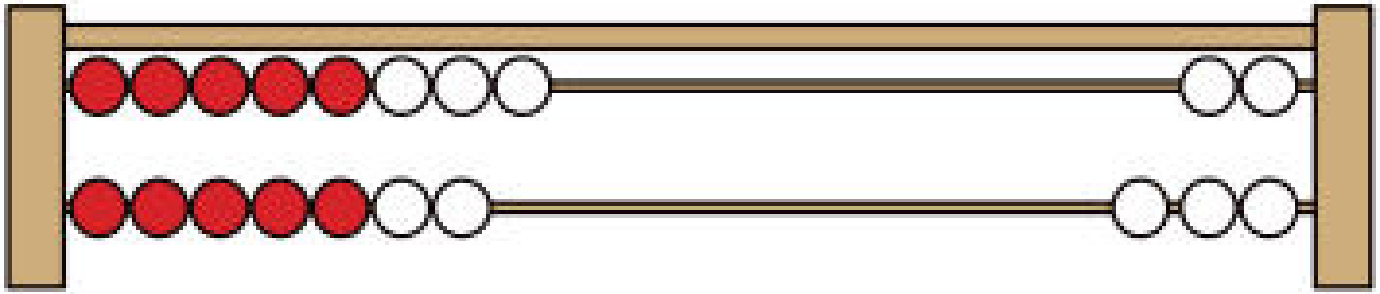
difference



Number Rack

A tool students use to help develop number sense and explore addition and subtraction strategies.

How could you use the beads to solve the combination **8 + 7**?



Repeat steps 9–11 with the following number combinations:

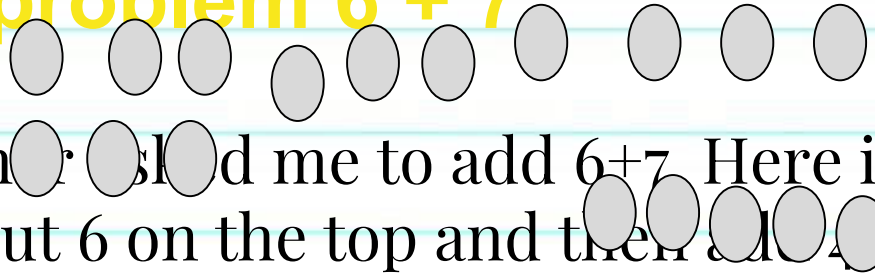
5 + 6 7 + 7 6 + 8 9 + 9

4 + 5 8 + 3 7 + 8

Interactive Number Rack

Using the Number Rack to Add 09/7/2023

Write to a friend about the number rack. Draw a picture of the number rack so your friend knows what it looks like. Then, explain how you could use the number rack to solve the problem 6 + 7.



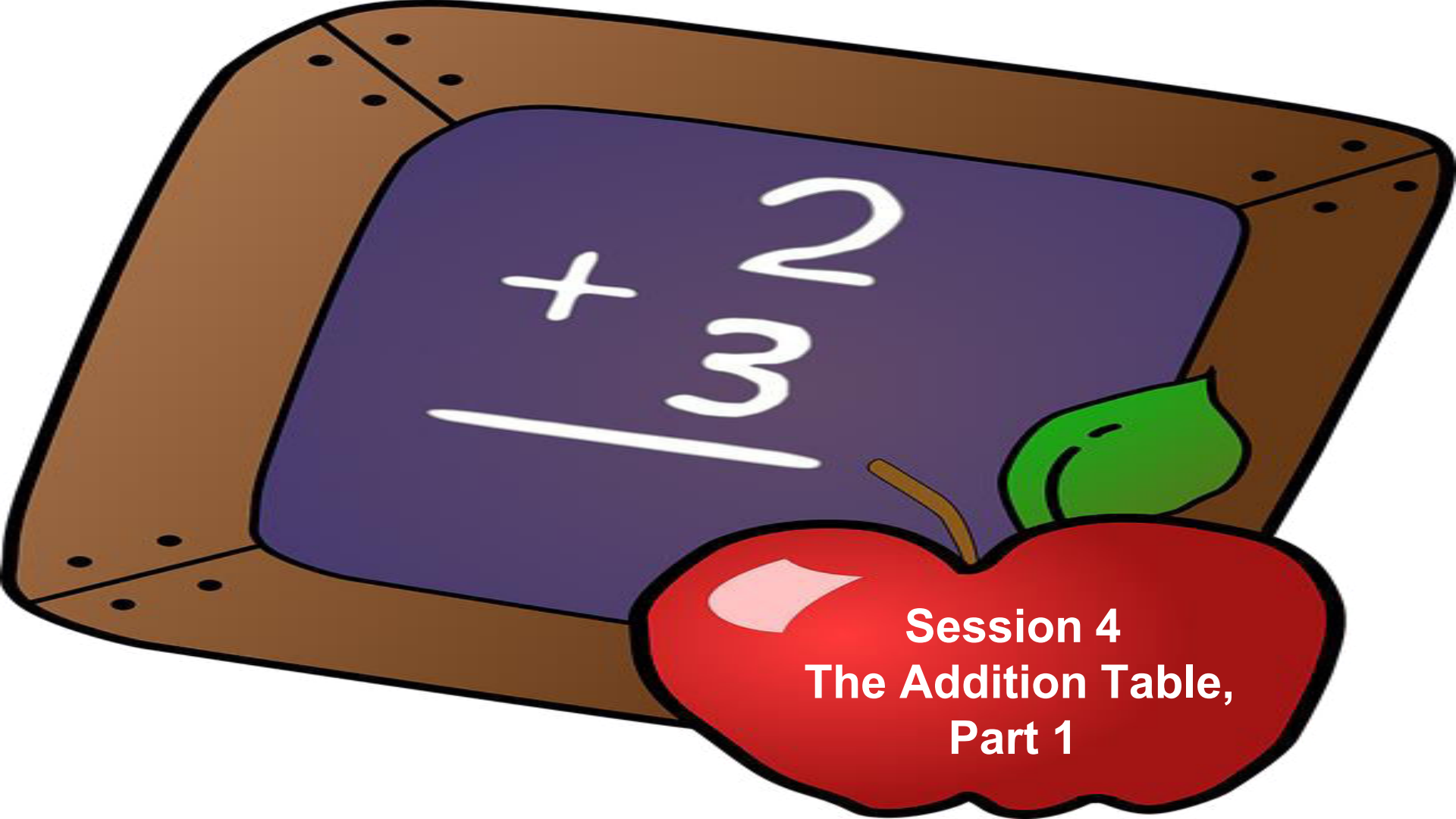
Dear Atiya,

My wonderful teacher showed me to add 6+7. Here is how you can do it! You can put 6 on the top and then add 4 more on the top. That will give you 10. Then, you add three more beads on the bottom. That will give yu_____.

Daily Practice

The optional Story Problems Student Book page provides additional opportunities to apply the following skills:

- Solve one-step addition story problems with sums to 100 involving situations of adding to and putting together, with unknowns in all positions (2.OA.1)



Session 4
The Addition Table, Part 1

Materials

Copies	Kit Materials	Classroom Materials
Assessment Reflecting on the Unit 1 Pre-Assessment		
TM T11 Unit 1 Pre-Assessment Student Reflection Sheet T 11		• Scored Unit 1 Pre-Assessment for each student (TM TX–X from Unit 1, Module 1, Session 3)
Problems & Investigations The Addition Table, Part 1		
SB 4* Addition Table SB 4	• demonstration number rack • Word Resource Cards for vocabulary listed at right	• standard pocket chart • overhead pens or markers in red, yellow, blue, green, and orange • class set of colored pencils in red, yellow, blue, green, and orange
Home Connection		
HC 1–2 Addition Fact Review HC 1-2		
Daily Practice		
SB 5 Addition Fact Practice SB 5		

Vocabulary

An asterisk [*] identifies those terms for which Word Resource Cards are available.

commutative property of addition*

even number*

odd number*

sum or total*

Preparation

- Have students' Unit 1 Pre-Assessments marked and ready to hand back to them. If you cannot mark the pre-assessments by this session, mark them in the next few days and find time for students to reflect on them before the end of Module 1.
- Review the completed Addition Table shown in Session 5 to become familiar with the categories of facts you will review with students in this session and in Session 5. Also, see the Unit 1 Introduction for more information about these facts.
- Post the Word Resource Cards listed in the Vocabulary section in a pocket chart or other location where students can see them. Plan to keep the cards displayed for the duration of the unit.

Assessment

Reflecting on the Unit 1 Pre-Assessment

1 Let students know they will have a chance to reflect on the Unit 1 Pre-Assessment and set goals for Unit 1. Then, they will review some work they have done previously with addition and vocabulary related to addition.

2 Hand students their scored Unit 1 Pre-Assessments, and give them a minute or so to look over the results.

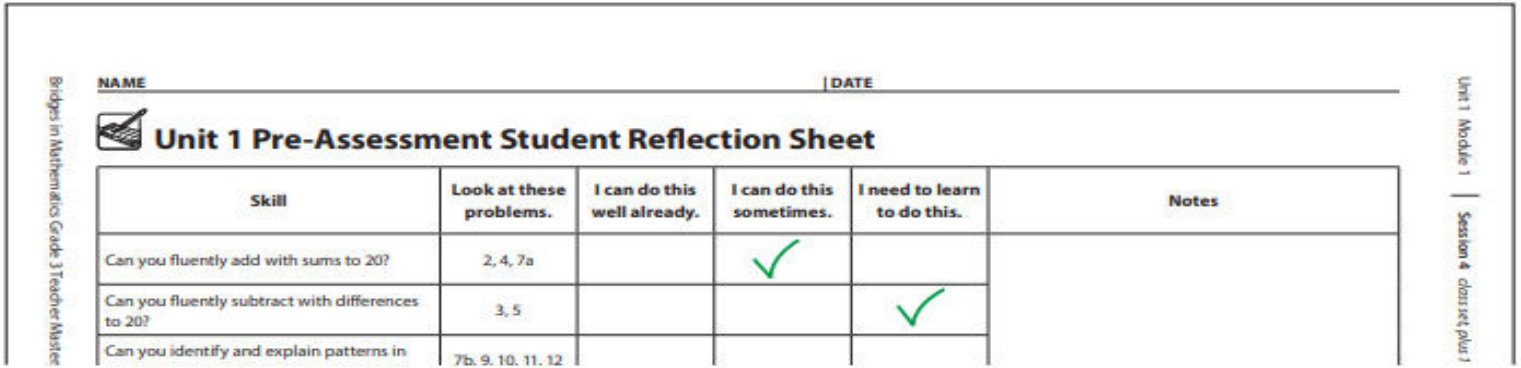
Looking at the pre-assessment results can help students recognize the learning expectations for the unit, identify which skills and concepts they currently understand, and focus their efforts in the lessons to come.

- Review with students how they can use the results of the Unit 1 Pre-Assessment to help them throughout the rest of the unit.
- Encourage them to ask questions, but do not explain how to do problems at this time. Similar problems will be introduced throughout the unit.
  - » Advise students to not be discouraged if their results were disappointing. They have several weeks to develop their skills, and they will take a similar assessment at the end of the unit.
  - » Advise students to not be complacent if their results were excellent. The pre-assessment is just a quick snapshot to guide your teaching, and students will have opportunities to improve their mathematical understanding during the unit.

3 Then, discuss the Unit 1 Student Reflection sheets, which students will use to write notes to themselves about the results of their assessments and to identify the skills and concepts they need to focus on most in Unit 1.

- Hand out the Unit 1 Student Reflection Sheet and ask students to look it over.
- Read the question at the beginning of each row, and show students where it indicates which items on the pre-assessment they can look at to answer the question.
- Fill in the first several rows on your display copy and model for students how they can look at their answers to the items identified in each row to decide which box to check.

> ***Teacher*** *This second question asks, "Can you fluently subtract with differences to 20?" What does that mean? Turn to your neighbor and explain what the question is asking.*
>
> ***Students*** *It means you can subtract.*
>
> *What does differences to 20 mean?*
>
> *Does that mean we need to be able to take away 20 from anything?*
>
> *I don't get it.*
>
> ***Teacher*** *It means, "Can you subtract with numbers that are 20 or smaller?" So we can look at these problems on the assessment to see how we did with that. If I got some of them right and some of them wrong, I'll check the "I can do this sometimes" box. That will be something I want to get better at in this unit.*



Bridges in Mathematics Grade 3 Teacher Master

NAME | DATE

Unit 1 Pre-Assessment Student Reflection Sheet

Skill	Look at these problems.	I can do this well already.	I can do this sometimes.	I need to learn to do this.	Notes
Can you fluently add with sums to 20?	2, 4, 7a		✓		
Can you fluently subtract with differences to 20?	3, 5			✓	
Can you identify and explain patterns in	7b, 9, 10, 11, 12				

Unit 1 Module 1 | Session 4 class set, plus 1

- Give students a few minutes to fill out the table at the top of their reflection sheets.

4 When students are nearly finished, ask them to draw a star next to the two skills they will need to focus on most during this unit. They can also write some notes at the bottom of the sheet if there's something special they want to remember or think about at the end of this unit.

When students are finished, collect the Unit 1 Pre-Assessment and Student Reflection sheets. Staple them together and file them so that you can combine them with the Unit 1 Post-Assessment at the end of the unit. You might also use them partway through the unit to discuss with individual students their progress in terms of the skills they needed to focus on.

Use the table that follows to complete these steps for each set of facts:

- First write the example facts on your board or at your projector.
- Ask the key questions, and invite students to show their thinking on the number rack.
- Color in the facts on your copy of the Addition Table using the color indicated. Have students do the same on their tables. Encourage them to color lightly so they can still see the facts. Have students outline in the new color those facts which have already been shaded in. For example, 2 + 2 will be colored yellow to show that it is a Count On fact; ask students to outline the fact in blue to show that it is also a Doubles fact.
- Label the facts on the legend, and have students do the same on their tables.
- Ask the follow-up questions, which encourage students to note patterns on the Addition Table and to think about odd and even numbers.

Use the Word Resource Cards to review odd *and* even numbers *when discussing these questions. Note that even numbers can always be divided into two equal sets, which means they can be represented with two equal quantities of beads on the number rack, half on top and half on the bottom. Odd numbers cannot. If you try to put half on top and half on bottom with odd numbers, you always end up with a row that has 1 more bead than the other.*

Practice the Make Ten facts by playing several rounds of I Have, You Need with the class, using 10 as your target sum to focus on pairs of numbers whose sum is 10.

I Have, You Need makes fact practice fun and easy. No materials are needed. You can use a variety of problems for this game, but for today, you will just use combinations with a sum of 10.

- Explain that the goal of the game is to help you make 10.
- You will say you have a number. ("I have 4.")
- Then the students will tell you how much more you need to make 10. ("You need 6.")
- When you start, give students a moment to think quietly, and then call on students one at a time.
- As the game continues, you can vary how you call on students—everyone can call out the answer, they can all tell a partner, or you can go back to calling on individuals. Encourage all students to try to participate, supporting those who seem uncertain by helping them talk through the problem to find the answer.
- For today, focus mainly on teaching students how to play the game and getting everyone involved.
- Play several rounds of the game. If the students are very quick, you can invite a student to lead the game for a few rounds.

Home Connection

20 Assign the Addition Fact Review Home Connection, which provides more practice with the following skills:

- Solve one-step subtraction story problems with minuends to 100 involving situations of taking away (2.OA.1)
- Fluently add with sums to 20 using mental strategies (2.OA.2)
- Add up to four 2-digit numbers using strategies based on place value and properties of operations (2.NBT.6)
- Solve two-step story problems using addition and subtraction (3.OA.8)
- Identify patterns among basic addition facts (3.OA.9)

Daily Practice

The optional Addition Fact Practice Student Book page provides additional opportunities to apply the following skills:

- Fluently add with sums to 20 using mental strategies (2.OA.2)
- Identify patterns among basic addition facts (3.OA.9)

Materials

Copies	Kit Materials	Classroom Materials
Problems & Investigations The Addition Table, Part 2		
	• demonstration number rack	• Addition Table (from Unit 1, Module 1, Session 4) • overhead pens or markers in purple, brown, and yellow • class set of purple, brown, and yellow colored pencils
Work Places Introducing Work Place 1A Make the Sum		
TM T12 Work Place Guide 1A Make the Sum **SB 6*** Work Place Instructions 1A Make the Sum	• Number Cards, half-class set T 12	• student math journals
Daily Practice		
SB 7 Addition Mixed Review	SB 6-7	

HC – Home Connection, **SB** – Student Book, **TM** – Teacher Master
Copy instructions are located at the top of each teacher master.
** Run 1 copy of this page to be kept in a clear plastic sleeve in the Work Place bin.*

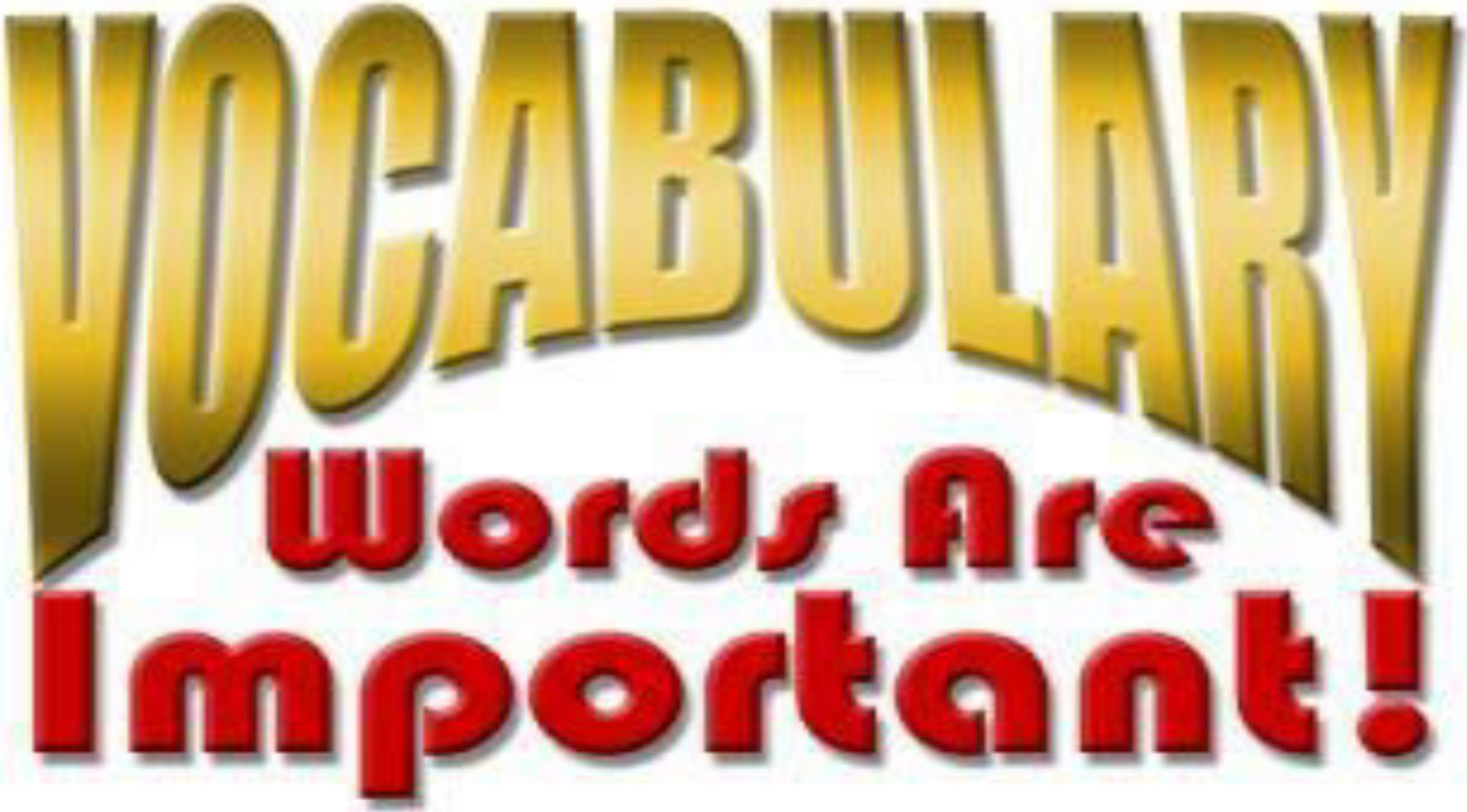
Preparation

In today's session, you'll introduce Work Place 1A Make the Sum. Before this session, you should review the Work Place Guide and Work Place Instructions and assemble the bin for Work Place 1A, using the materials listed in the guide. The Work Place Guide also includes suggestions for differentiating the game to meet students' needs.

Interactive Number Rack

I Can....

- ★ **Fluently add within 20 using mental strategies (2.OA.2)**
- ★ **Identify patterns among the basic addition facts, and explain those patterns by referring to properites of the operation (3.OA.9)**


VOCABULARY
Words Are
Important!


How and when do you use addition?

0+5

8+0

What happens when you add 0 to any number? Use the number rack to show your thinking.

Are the sums in Add Zero facts odd or even?

Interactive Number Rack

1+7

9+2

How can you use the number rack to show each of these examples?

Are the sums in Count On facts odd or even?

Interactive Number Rack

Interactive Number Rack

6 + 6

8 + 8

9 + 9

How can you use the number rack to show different ways to find the sum?

How can you use 5 + 5 to help find the sum?

How can you use 10 + 10 to help find the sum?

6+7

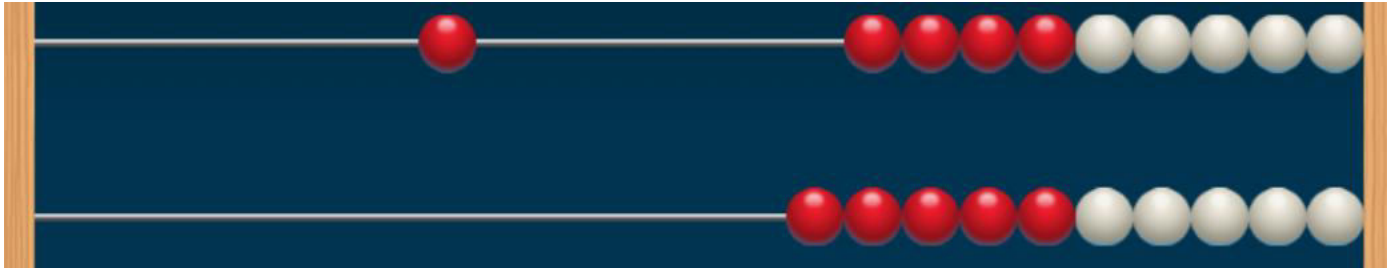
8+9

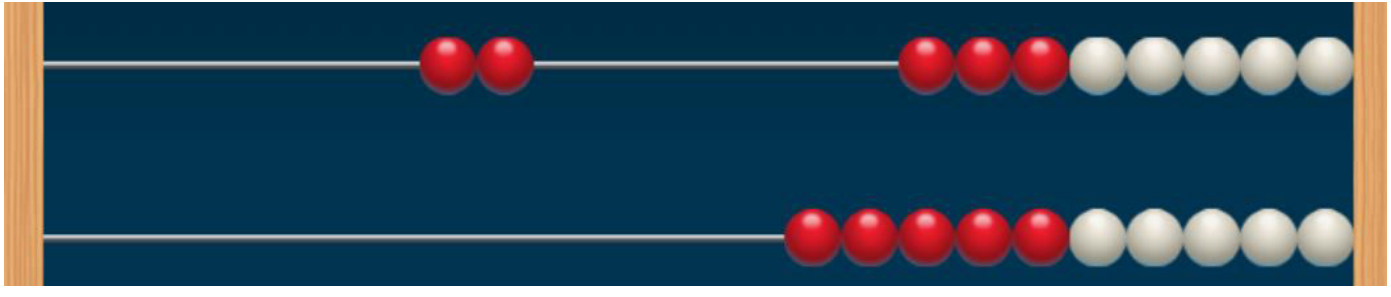
How can you use the number rack to find the sum of 6 + 7?

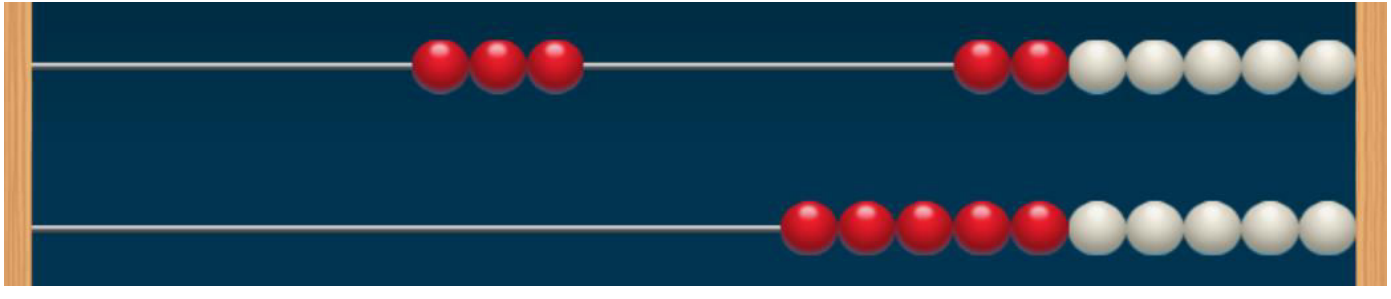
How can you use doubles to find the sum of 8 + 9?

Interactive Number Rack

What addition equation would describe the combination you see on the top row?





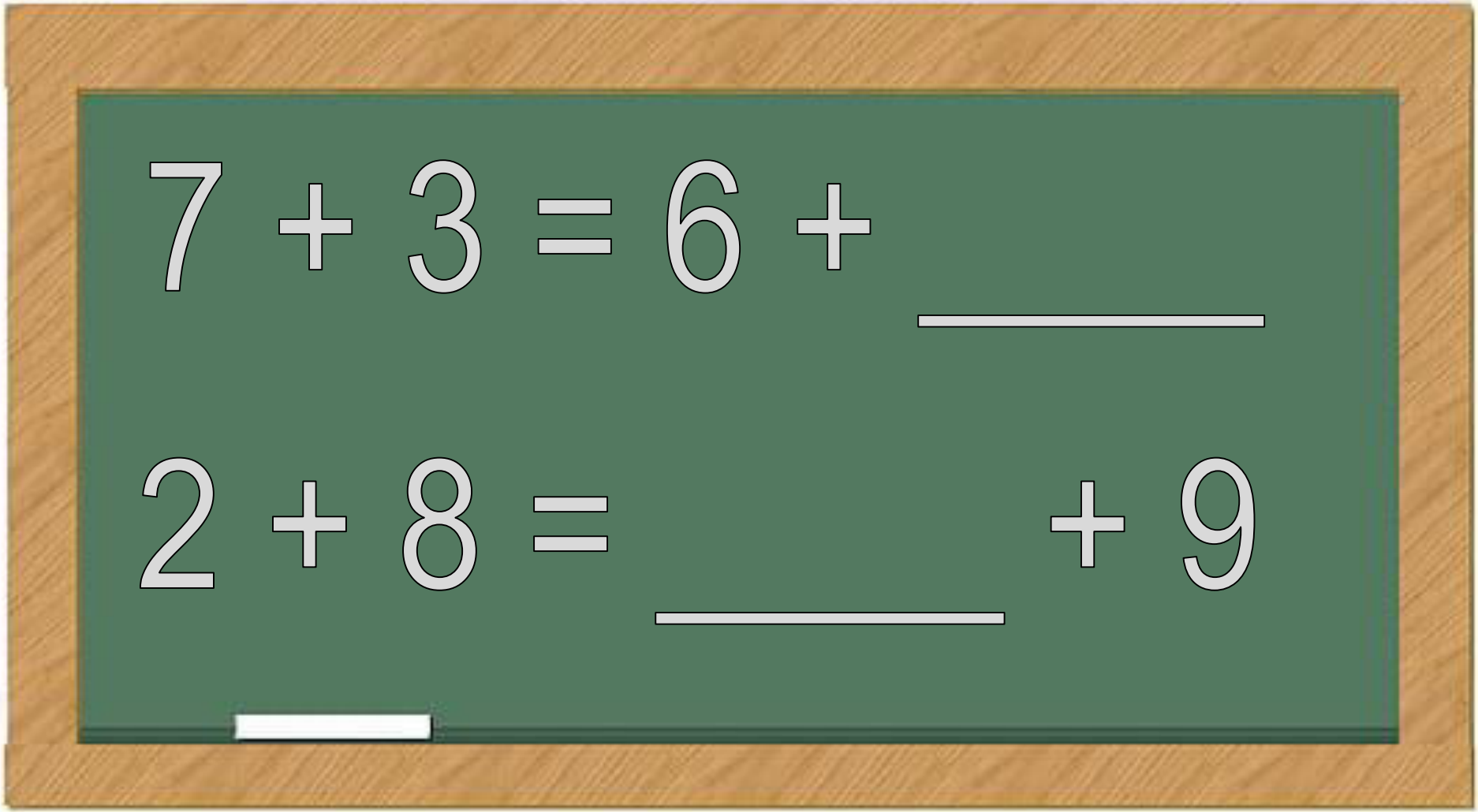


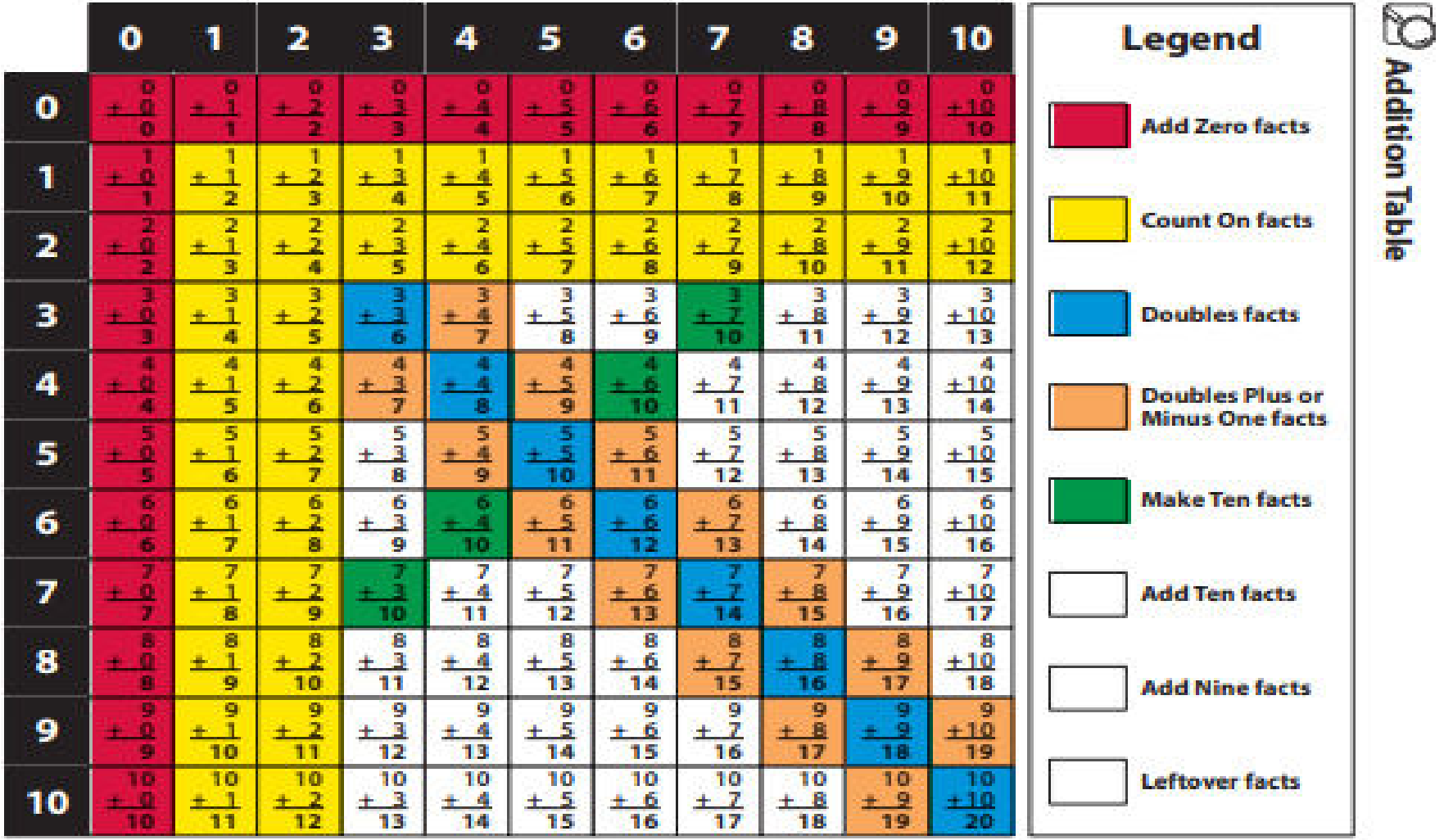
Make Ten facts.

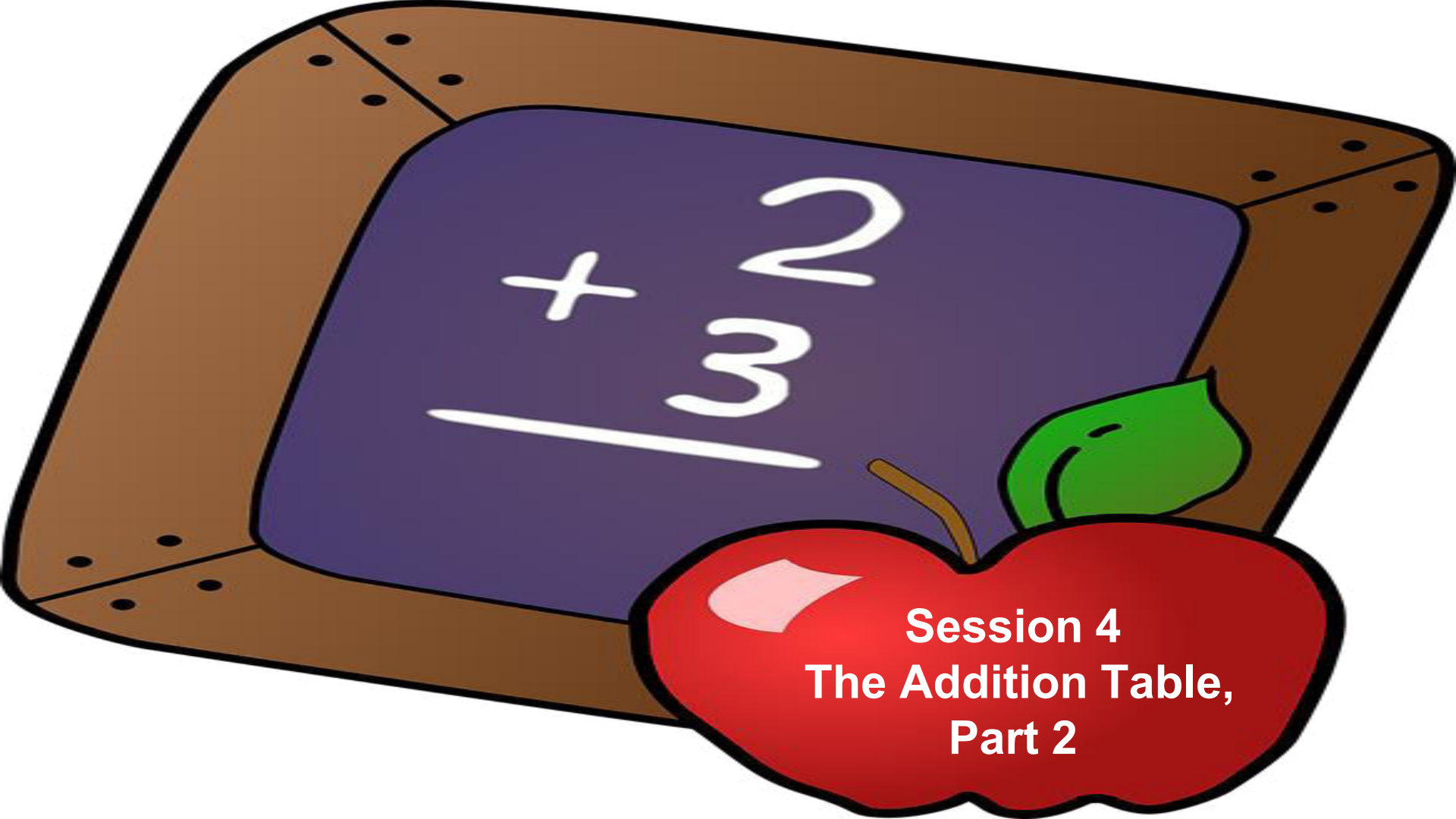
Share what you notice about the list of equations.

1+9=10
2+8=10
3+7=10

7+3=10
8+2=10
9+1=10


7 + 3 = 6 + ____
2 + 8 = ____ + 9

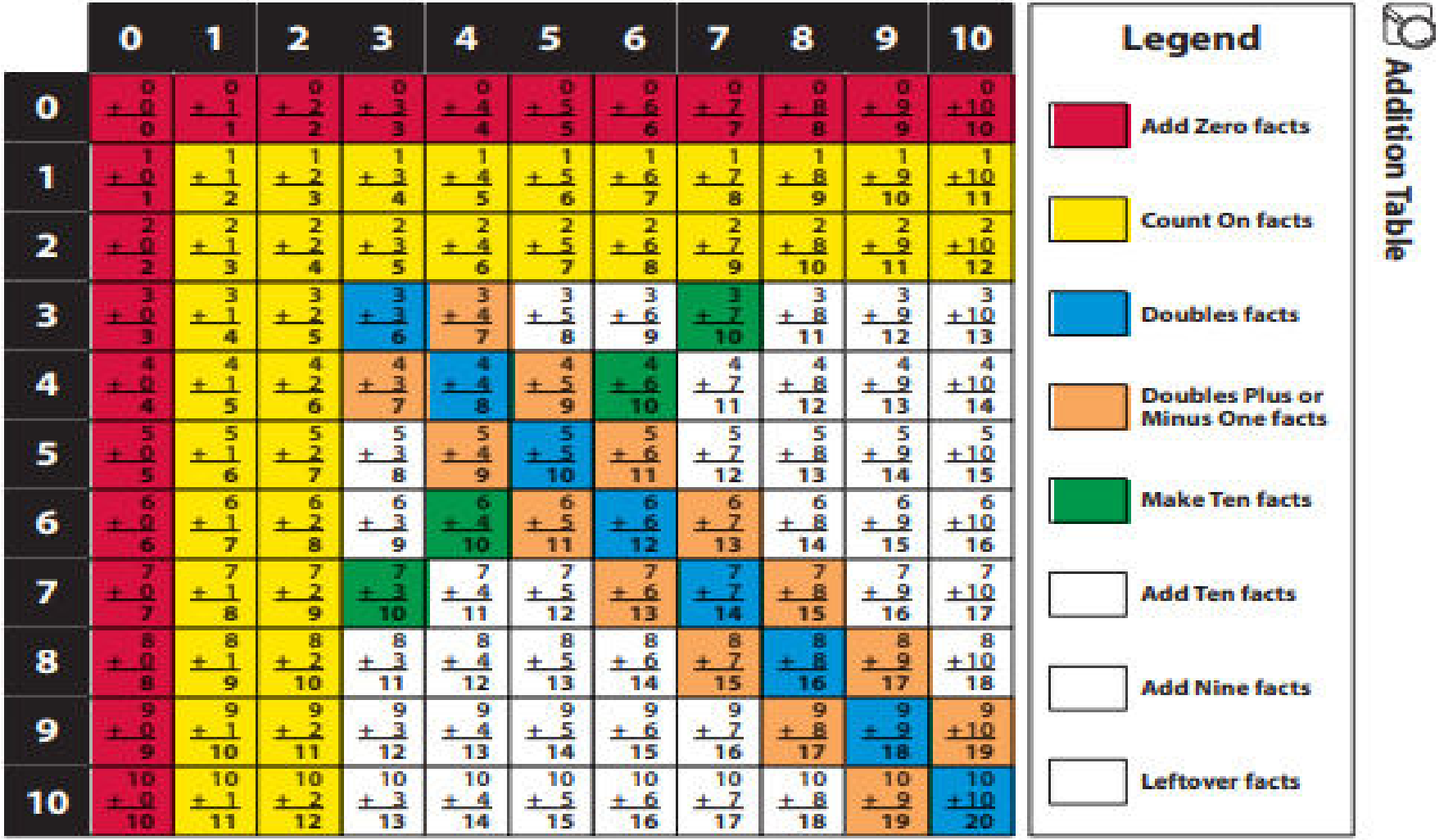

0 1 2 3 4 5 6 7 8 9 10
0 0+0=0 0+1=1 0+2=2 0+3=3 0+4=4 0+5=5 0+6=6 0+7=7 0+8=8 0+9=9 0+10=10
1 1+0=1 1+1=2 1+2=3 1+3=4 1+4=5 1+5=6 1+6=7 1+7=8 1+8=9 1+9=10 1+10=11
2 2+0=2 2+1=3 2+2=4 2+3=5 2+4=6 2+5=7 2+6=8 2+7=9 2+8=10 2+9=11 2+10=12
3 3+0=3 3+1=4 3+2=5 3+3=6 3+4=7 3+5=8 3+6=9 3+7=10 3+8=11 3+9=12 3+10=13
4 4+0=4 4+1=5 4+2=6 4+3=7 4+4=8 4+5=9 4+6=10 4+7=11 4+8=12 4+9=13 4+10=14
5 5+0=5 5+1=6 5+2=7 5+3=8 5+4=9 5+5=10 5+6=11 5+7=12 5+8=13 5+9=14 5+10=15
6 6+0=6 6+1=7 6+2=8 6+3=9 6+4=10 6+5=11 6+6=12 6+7=13 6+8=14 6+9=15 6+10=16
7 7+0=7 7+1=8 7+2=9 7+3=10 7+4=11 7+5=12 7+6=13 7+7=14 7+8=15 7+9=16 7+10=17
8 8+0=8 8+1=9 8+2=10 8+3=11 8+4=12 8+5=13 8+6=14 8+7=15 8+8=16 8+9=17 8+10=18
9 9+0=9 9+1=10 9+2=11 9+3=12 9+4=13 9+5=14 9+6=15 9+7=16 9+8=17 9+9=18 9+10=19
10 10+0=10 10+1=11 10+2=12 10+3=13 10+4=14 10+5=15 10+6=16 10+7=17 10+8=18 10+9=19 10+10=20
Legend
Add Zero facts
Count On facts
Doubles facts
Doubles Plus or Minus One facts
Make Ten facts
Add Ten facts
Add Nine facts
Leftover facts
Addition Table



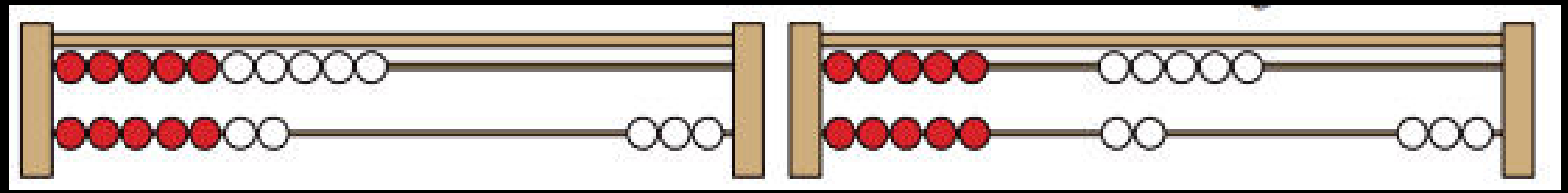
Session 4
The Addition Table, Part 2

I Can....

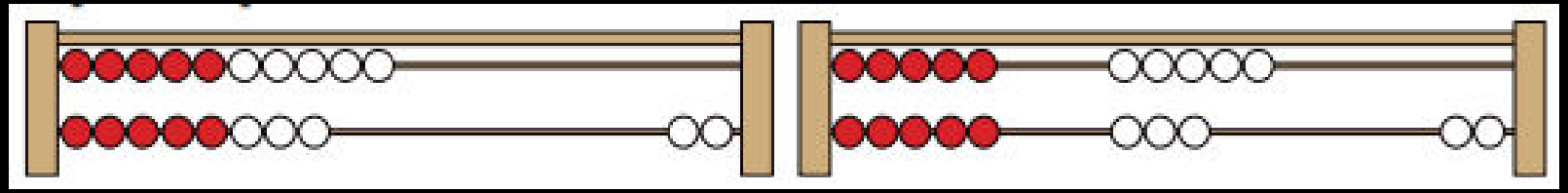
- ★ **Fluently add within 20 using mental strategies (2.OA.2)**
- ★ **Identify patterns among the basic addition facts, and explain those patterns by referring to properties of the operation (3.OA.9)**


0 1 2 3 4 5 6 7 8 9 10
0 0+0=0 0+1=1 0+2=2 0+3=3 0+4=4 0+5=5 0+6=6 0+7=7 0+8=8 0+9=9 0+10=10
1 1+0=1 1+1=2 1+2=3 1+3=4 1+4=5 1+5=6 1+6=7 1+7=8 1+8=9 1+9=10 1+10=11
2 2+0=2 2+1=3 2+2=4 2+3=5 2+4=6 2+5=7 2+6=8 2+7=9 2+8=10 2+9=11 2+10=12
3 3+0=3 3+1=4 3+2=5 3+3=6 3+4=7 3+5=8 3+6=9 3+7=10 3+8=11 3+9=12 3+10=13
4 4+0=4 4+1=5 4+2=6 4+3=7 4+4=8 4+5=9 4+6=10 4+7=11 4+8=12 4+9=13 4+10=14
5 5+0=5 5+1=6 5+2=7 5+3=8 5+4=9 5+5=10 5+6=11 5+7=12 5+8=13 5+9=14 5+10=15
6 6+0=6 6+1=7 6+2=8 6+3=9 6+4=10 6+5=11 6+6=12 6+7=13 6+8=14 6+9=15 6+10=16
7 7+0=7 7+1=8 7+2=9 7+3=10 7+4=11 7+5=12 7+6=13 7+7=14 7+8=15 7+9=16 7+10=17
8 8+0=8 8+1=9 8+2=10 8+3=11 8+4=12 8+5=13 8+6=14 8+7=15 8+8=16 8+9=17 8+10=18
9 9+0=9 9+1=10 9+2=11 9+3=12 9+4=13 9+5=14 9+6=15 9+7=16 9+8=17 9+9=18 9+10=19
10 10+0=10 10+1=11 10+2=12 10+3=13 10+4=14 10+5=15 10+6=16 10+7=17 10+8=18 10+9=19 10+10=20
Legend
Add Zero facts
Count On facts
Doubles facts
Doubles Plus or Minus One facts
Make Ten facts
Add Ten facts
Add Nine facts
Leftover facts
Addition Table

10 + 7



10+8



How would you represent each combination on the number rack?

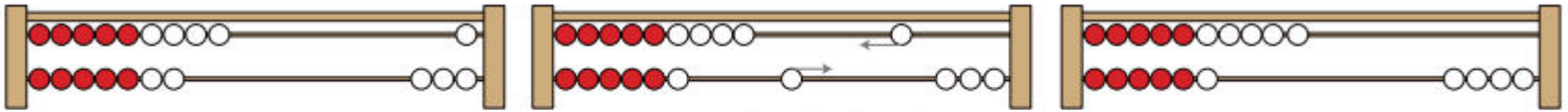
Interactive Number Rack

3 + 10 and 10 + 6

Interactive Number Rack

9 + 7

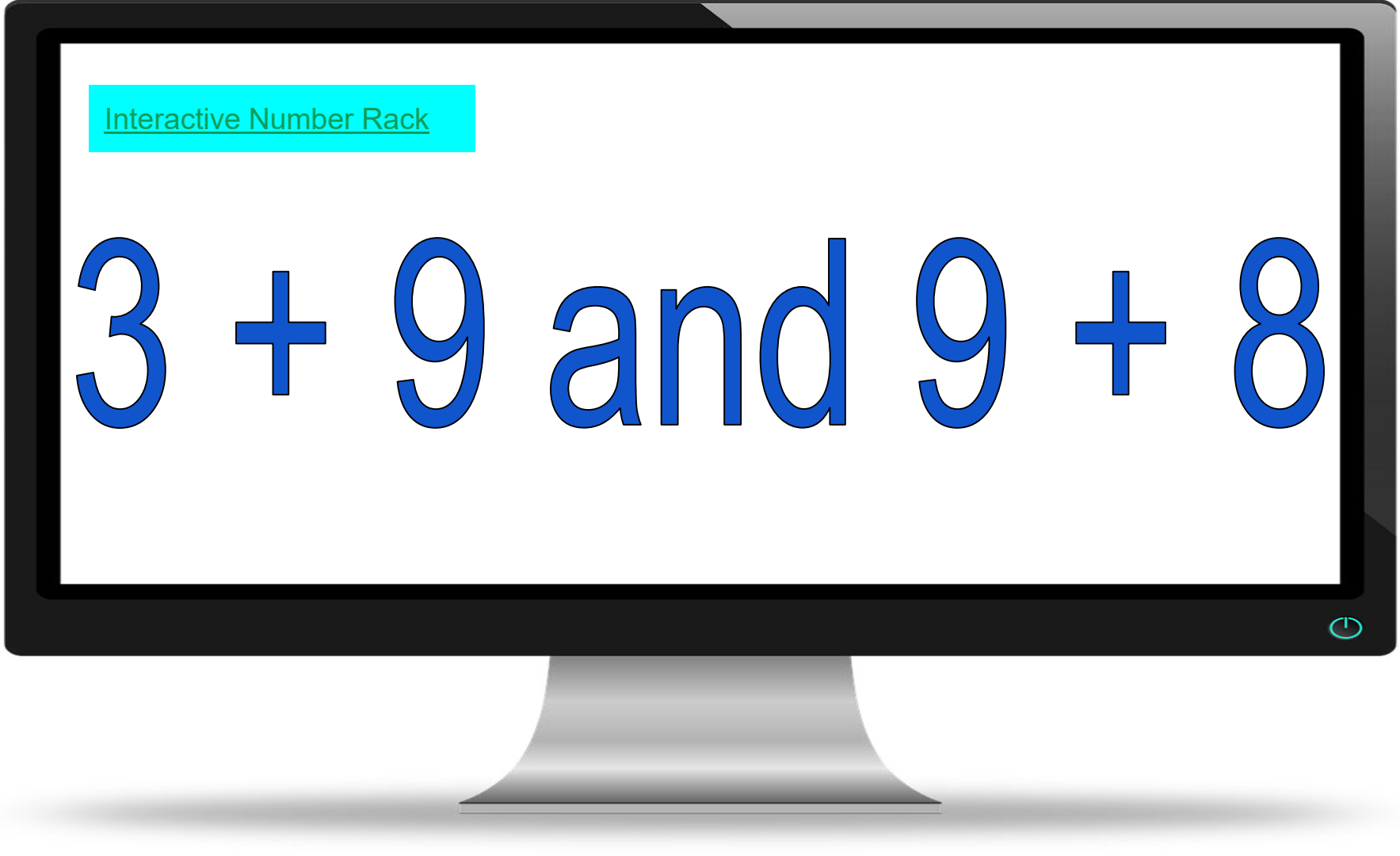
How could you model this combination and find the sum using the number rack?



9 + 7 = (9 + 1) + (7 − 1)

10 + 6

9 + 7 = 10 + 6


Interactive Number Rack
3 + 9 and 9 + 8

	0	1	2	3	4	5	6	7	8	9	10
0	0 + 0 = 0	0 + 1 = 1	0 + 2 = 2	0 + 3 = 3	0 + 4 = 4	0 + 5 = 5	0 + 6 = 6	0 + 7 = 7	0 + 8 = 8	0 + 9 = 9	0 + 10 = 10
1	1 + 0 = 1	1 + 1 = 2	1 + 2 = 3	1 + 3 = 4	1 + 4 = 5	1 + 5 = 6	1 + 6 = 7	1 + 7 = 8	1 + 8 = 9	1 + 9 = 10	1 + 10 = 11
2	2 + 0 = 2	2 + 1 = 3	2 + 2 = 4	2 + 3 = 5	2 + 4 = 6	2 + 5 = 7	2 + 6 = 8	2 + 7 = 9	2 + 8 = 10	2 + 9 = 11	2 + 10 = 12
3	3 + 0 = 3	3 + 1 = 4	3 + 2 = 5	3 + 3 = 6	3 + 4 = 7	3 + 5 = 8	3 + 6 = 9	3 + 7 = 10	3 + 8 = 11	3 + 9 = 12	3 + 10 = 13
4	4 + 0 = 4	4 + 1 = 5	4 + 2 = 6	4 + 3 = 7	4 + 4 = 8	4 + 5 = 9	4 + 6 = 10	4 + 7 = 11	4 + 8 = 12	4 + 9 = 13	4 + 10 = 14
5	5 + 0 = 5	5 + 1 = 6	5 + 2 = 7	5 + 3 = 8	5 + 4 = 9	5 + 5 = 10	5 + 6 = 11	5 + 7 = 12	5 + 8 = 13	5 + 9 = 14	5 + 10 = 15
6	6 + 0 = 6	6 + 1 = 7	6 + 2 = 8	6 + 3 = 9	6 + 4 = 10	6 + 5 = 11	6 + 6 = 12	6 + 7 = 13	6 + 8 = 14	6 + 9 = 15	6 + 10 = 16
7	7 + 0 = 7	7 + 1 = 8	7 + 2 = 9	7 + 3 = 10	7 + 4 = 11	7 + 5 = 12	7 + 6 = 13	7 + 7 = 14	7 + 8 = 15	7 + 9 = 16	7 + 10 = 17

Legend

- Add Zero facts
- Count On facts
- Doubles facts
- Doubles Plus or Minus One facts
- Make Ten facts
- Add Ten facts

How would you represent each combination on the number rack?

Interactive Number Rack

3 + 5 and 6 + 3

Work Place 1A Make the Sum

★ Online Game

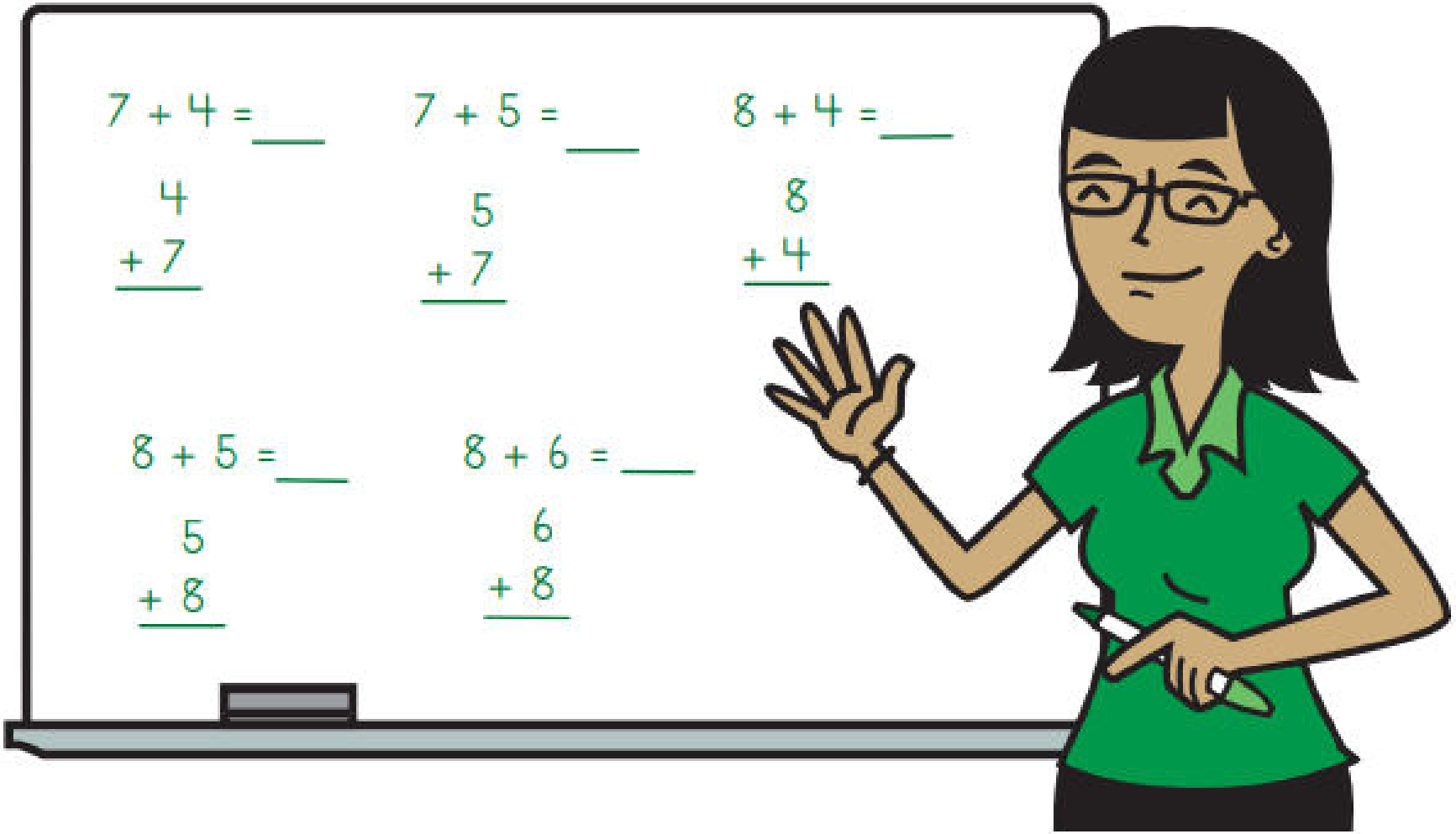
★ Student Work Place

★ Video Demonstration

T 12

SB 6

Work Place Sentence Frames


7 + 4 = ___
4
+ 7
7 + 5 = ___
5
+ 7
8 + 4 = ___
8
+ 4
8 + 5 = ___
5
+ 8
8 + 6 = ___
6
+ 8

Discuss odd and even patterns in the Addition Table.

The following questions can help spur discussion.

- We have colored groups of facts that are similar. Which groups of facts have sums that are always even?
- Which groups of facts have sums that are always odd?
- Where are some facts that show an even plus an even number in the Addition Table? Is there a pattern?
- What happens when you add an even number to another even number? Use the number rack to show why this happens.
- Where are some facts that show an odd plus an odd number in the Addition Table? Is there a pattern?
- What happens when you add an odd number to another odd number? Use the number rack to show why this happens.

Daily Practice

The optional Addition Mixed Review Student Book page provides additional opportunities to apply the following skills:

- Fluently add with sums to 20 using mental strategies (2.OA.2)
- Identify patterns among basic addition facts (3.OA.9)

Today's practice

- In your Bridges student book work on pages 1,2,3,5,7